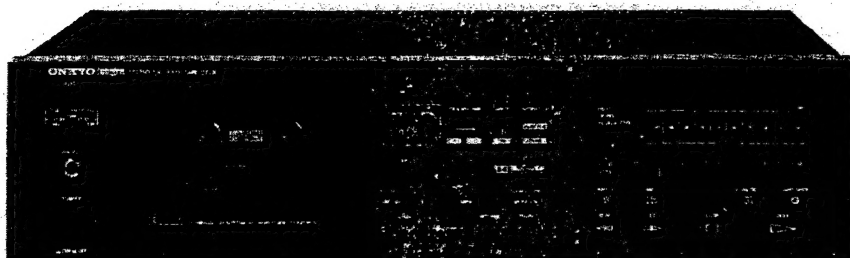


# ONKYO SERVICE MANUAL

## STEREO CASSETTE TAPE DECK MODEL TA-2350



Black and silver model

### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\Delta$  ON THE SCHEMATIC DIAGRAM AND IN THE PARTS LIST ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE THESE COMPONENTS WITH ONKYO PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL.

MAKE LEAKAGE-CURRENT OR RESISTANCE MEASUREMENTS TO DETERMINE THAT EXPOSED PARTS ARE ACCEPTABLY INSULATED FROM THE SUPPLY CIRCUIT BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

### SPECIFICATIONS

Track Format:	4 tracks, 2 channels
Erasing System:	AC erase
Tape Speed:	4.8 cm/sec. (1-7/8 i.p.s.)
Wow & Flutter:	0.045% (WRMS)
Frequency Response:	20-17,000 Hz (30-16,000 Hz $\pm$ 3dB) (normal position tape) 20-18,000 Hz (30-17,000 Hz $\pm$ 3dB) (high position tape) 20-19,000 Hz (30-18,000 Hz $\pm$ 3dB) (metal position tape)
Signal-to-Noise Ratio:	60dB (metal position tape, Dolby NR out) A noise reduction of 10dB above 5kHz and 5dB at 1kHz is possible with Dolby B NR. A noise reduction of 20dB at 5kHz is possible with Dolby C NR.
Input Jacks:	Mic jacks: 2 Input sensitivity: 0.6mV/600 ohms Input impedance: 2.7 kohms Line IN: 2 Input sensitivity: 60mV Input impedance: 50 kohms
Outputs:	Line OUT: 2 Std output level: 500mV (0dB) Optimum load impedance: over 50 kohms Headphone Jack: 1

**ONKYO®**  
**AUDIO COMPONENTS**

	Optimum load impedance: 8-200 ohms
Motors:	DC servo motor: 1 DC motor: 2
Heads:	REC/PB heads: Special Hard Permalloy Erase head: Ferrite
Power Supply:	AC 220V/50Hz
Power Consumption:	28 watts
Dimensions:	435 (W) x 112 (H) x 360 (D) mm (17-1/8" x 4-3/8" x 14-1/8")
Weight:	5.8 kg. (12.8 lbs.)

Specifications and external appearance are subject to change without notice because of product improvements:

## SERVICE PROCEDURES

### 1. Replacing the lamp

This unit used the lamp listed below.

Circuit No.	Parts No.	Description
PL-901	210090	150mA, 14V, Lamp
PL-902	210183	600mA, 14V, Lamp

Caution; Before replacing the lamp. Be sure to unplug the power supply cable.

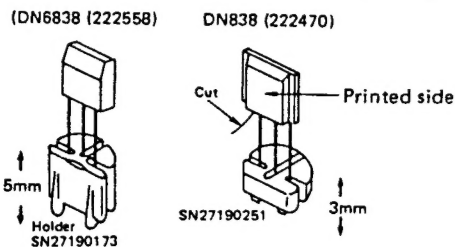
### 2. Instruction resistance measurement

Connect the insulating-resistance tester between the plug of power supply cord and chassis.

Specifications; 500V more than 10MΩ

### 3. Replacing the Hall ICs

Cautions: As the position of leg of DN6838 and DN838 differ, use the same Hall IC when replacing.



## FEATURES

### Three Heads with Special Hard Permalloy For Superior Metal Tape Performance

Having three heads means you can monitor the actual recorded signal as you record instead of rewinding the tape to check your recording afterward. The 3-head system also has the advantage of making possible the use of separate record and playback gaps, each optimized for its own task. The special hard permalloy head formulation boasts the high saturation flux density and abrasion resistance needed for true metal tape compatibility.

### ACCUBIAS For The Best Performance With Any Tape

The ACCUBIAS system fine tunes the recording bias to ob-

tain optimum performance with any kind of tape (except metal tape). By setting precisely the correct bias level, ACCUBIAS guarantees the flattest frequency response and highest signal-to-noise ratio possible with each tape.

### 2-Motor Tape Transport with Separate Head Assembly Motor

The tape transport system, along with the heads, determines the level of performance of a cassette deck. To assure extremely stable and accurate transport, this unit uses a DC servo-controlled capstan motor. This motor is unaffected by fluctuations in the power supply voltage and frequency and instantaneous changes in load. A highly reliable simple drive transmission system and precision vertical cassette holder further enhance overall accuracy and stability. As a result, wow and flutter is under 0.045%. In addition, separate DC motors drive the reel tables and head base and the head assembly is constructed to move silently with no annoying clicks.

### Dolby B and C Noise Reduction

Along with standard Dolby B NR, this unit also has the even more effective Dolby C NR system. Dolby C NR reduces tape background noise by 20dB at 5kHz, about 3 times more than Dolby B NR. In addition to its wide band noise reduction, Dolby C NR uses a sliding band technique that varies the band width of noise reduction according to the input level, thereby avoiding noise "pumping." Dolby C NR also has an anti-saturation effect to reduce the chance of tape saturation in the high range. All these features combine to eliminate the adverse effects on-tape sound that other noise reduction systems can cause.

### Auto Music Control System (AMCS)

The AMCS automatically locates the beginning of every song on a cassette in either the forward or the reverse direction. When AMCS FWD is pressed during the play mode, tape is rapidly wound to the beginning of the next song and approximately the first 10 seconds is played. Then the tape is rapidly wound forward to the beginning of the next song and about 10 seconds is played. This process continues until the PLAY key is pressed to cancel AMCS operation and return to normal playback. When AMCS REV is pressed during the play mode, the same process is performed in the reverse direction.

### Remote Control Unit Terminal

With an optional remote control unit (such as the RC-5T), this unit can be controlled even while you are relaxing in your favorite chair. All transport modes are included: record, play, fast forward, rewind, stop and pause.

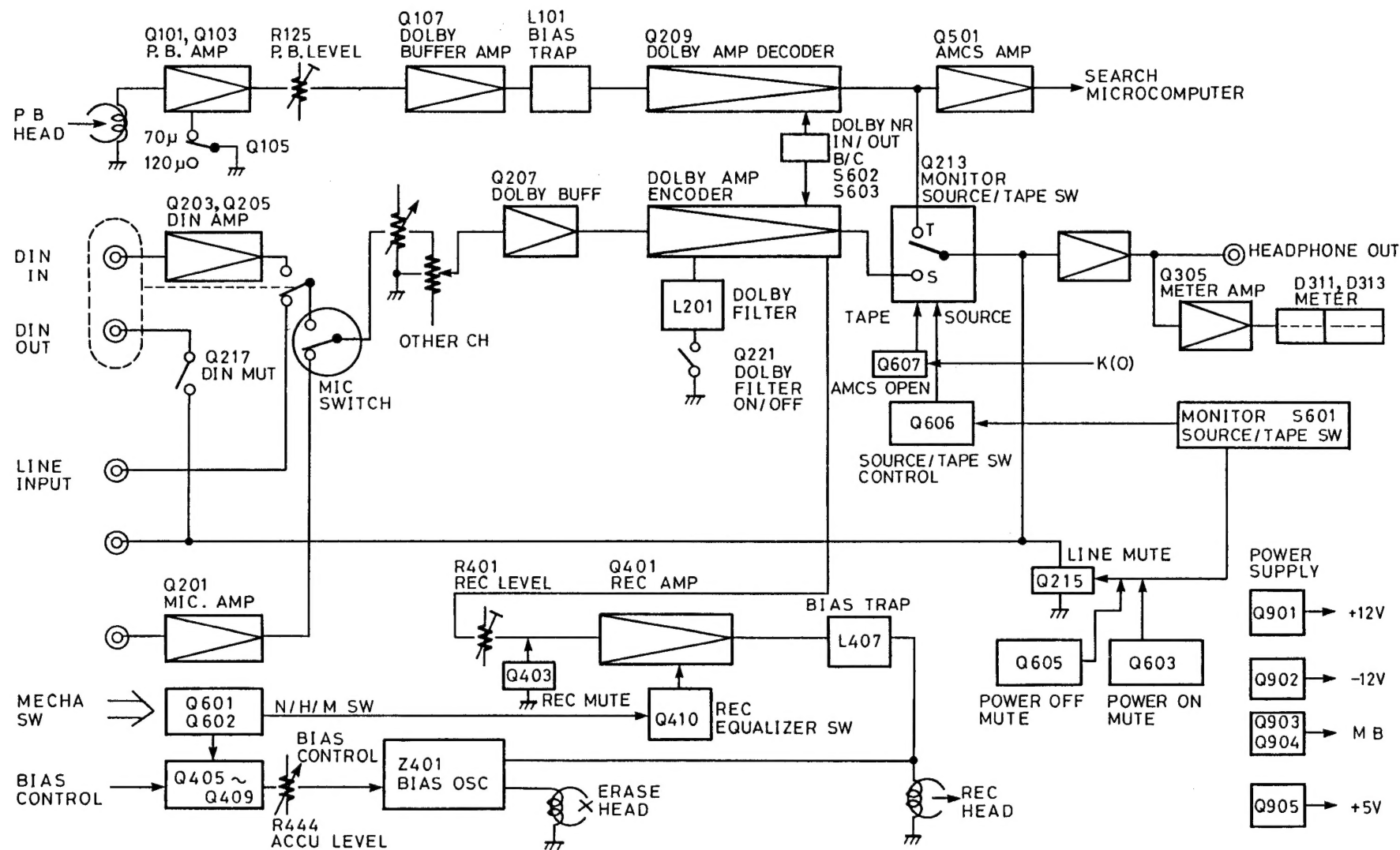
### Auto Space Rec Mute Key

This key lets you insert unrecorded sections five seconds long with just one quick tap.

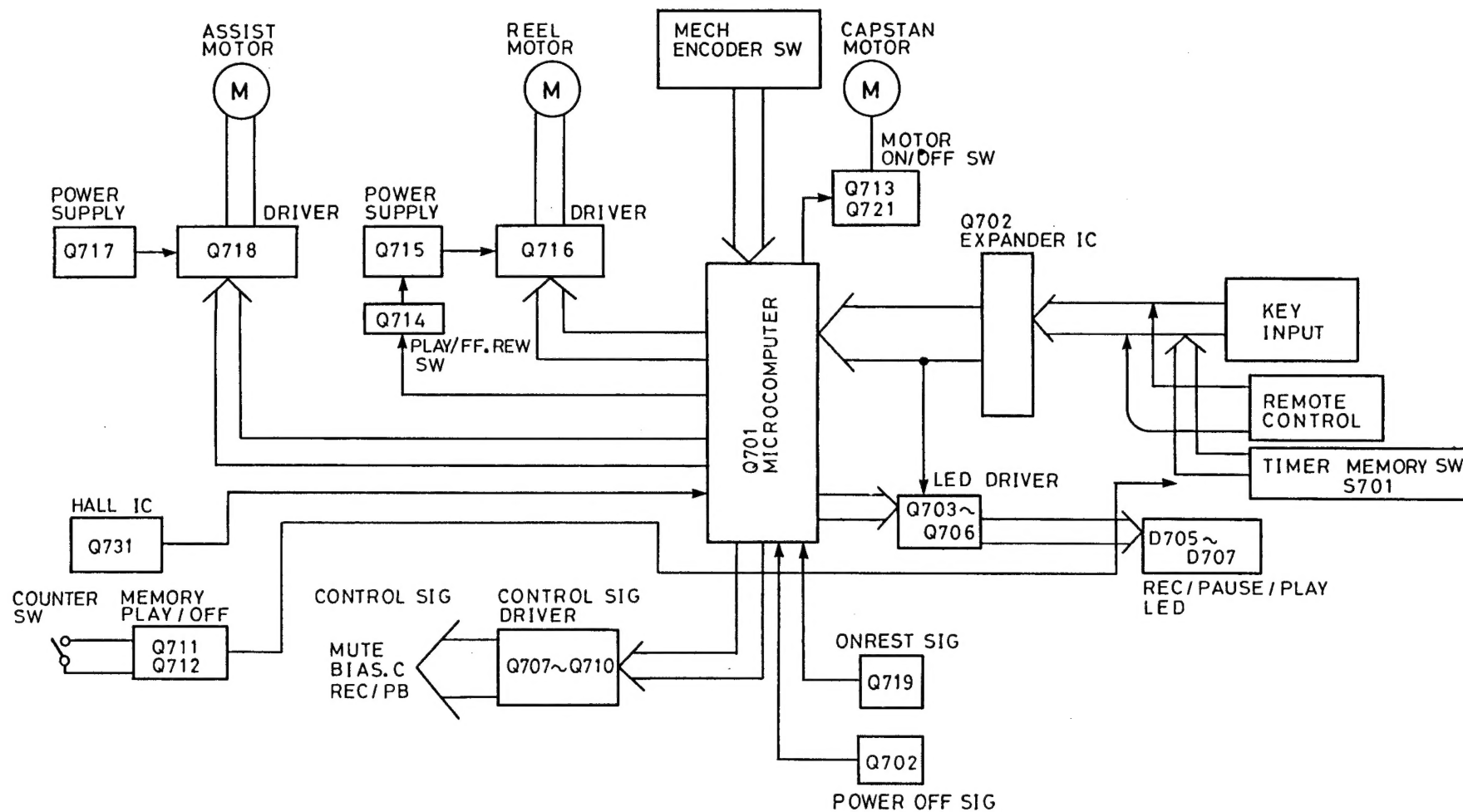
### Fully Automatic Tape Selection

This deck senses the type of cassette inserted and automatically sets the correct amount of bias and equalization.

# BLOCK DIAGRAM (AMPLIFIER SECTION)



# BLOCK DIAGRAM (CONTROL SECTION)





## INPUT PORT EXPANDER IC

The equivalent circuit of the LC7800 used to expand input ports is shown in Figure 1. This IC includes four 4-bit input ports, one 4-bit output port, and one 4-bit selector input port. When BA of the selector input is set to LOW and the other bits to HIGH, the A0" A1" A2" A3 input port is connected to the D0" D1" D2" D3 output port. And if only the BB bit is set to LOW, the B0" B1" B2" B3 input port is selected. Hence, a LOW level signal is applied to the selector port bits in cyclic order, and the operation indicator LEDs are switched on and off dynamically in combination with the #13, #14, and #15 LED output ports while input port data is being read out.

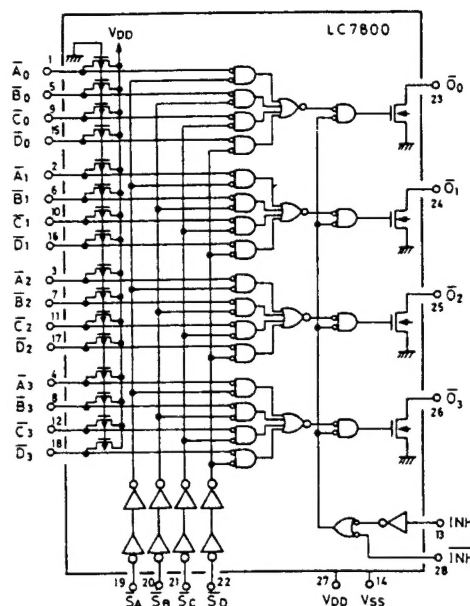
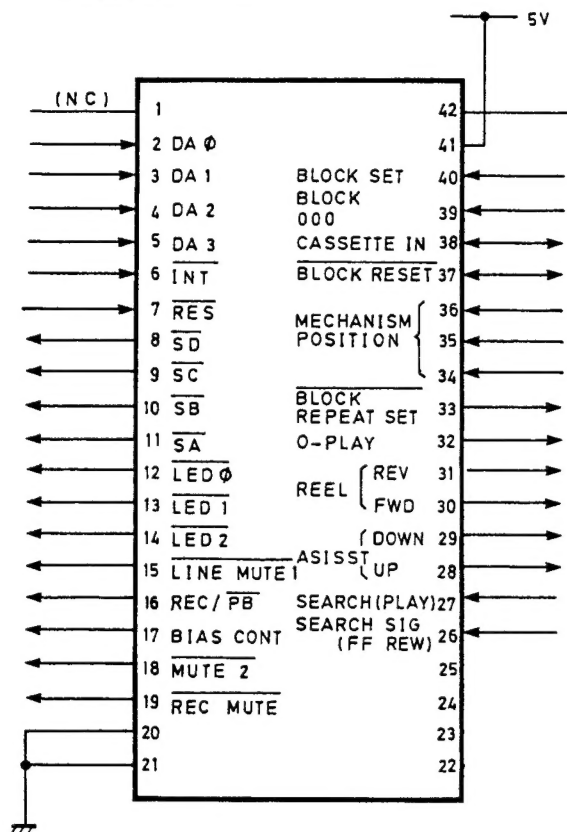


Fig. 1 LC7800 equivalent circuit

## MICROCOMPUTER(LM6402H-425)

Pin no.	Name	Function	Classification
2~5	DA0~DA3	Reading of data from the inport port expander IC	IN
6	$\overline{\text{INT}}$	Rotation signal input (for auto-stop operation)	IN
8~11	$\overline{\text{SA}} \sim \overline{\text{SD}}$	Input port expander IC and dynamic LED selector IC	OUT
12~14	$\overline{\text{LED0}} \sim \overline{\text{LED3}}$	Operation display dynamic LED data output	OUT
15	LINE MUTE 1	Line muting output signal generated when the power is switched on, and during ACCU BIAS operation.	OUT
16	REC/PB	Output signal for muting DIN outputs when recording	OUT
17	BIAS CONT.	Output signal for control of bias oscillator	OUT
18	MUTE2	Signal for switching muting off during playback	OUT
19	REC. MUTE	Signal for muting the recording amplifier output	OUT
22	ACCU BUSY	Output signal generated during ACCU BIAS operation	OUT
23			OUT
24			OUT
25			OUT
26	SEARCH SIG (HIGH)	Input signal from high-speed travel tune-selector.	IN
27	SEARCH SIG (LOW)	Input signal from low-speed travel tune-selector amplifier	IN
28	UP	Output signal for driving the assist motor towards the PLAY position.	OUT
29	DOWN	Output signal for driving the assist motor towards the FF/REW position.	OUT
30	FWD	Output signal for driving the reel motor towards the FF position.	OUT
31	REW	Output signal for driving the reel motor towards the REV position.	OUT
32	O-PLAY	Reel motor torque switching output	OUT
33	BLOCK SET	Output which informs the counter IC that the BLOCK SET key has been pressed.	OUT
34~36	a.b.c	Input ports for signal from the mechanism position switches	IN
37	BLOCK RESET	Output which informs the counter IC that the BLOCK RESET key, or any other key apart from the BLOCK SET key has been pressed.	OUT
38	CASSETTE IN	Input involved in detection of cassette half, and output which stops the capstan motor when an abnormal mechanism status is detected.	I/O
39	BLOCK MATCHING & 000 INPUT	Input of 000 input signal and BLOCK matching signal from the counter IC.	IN
40	BLOCK SET	Input which accepts signals from the counter IC during BLOCK SET.	IN

# MICRO COMPUTER LM6402H-425



## Assist up, down, and Reel FWD/REV signals

	Q701	POWER ON → PLAY → STOP → PLAY (FF)							
Assist motor	#28 (UP)	H	H	H	L	H	H	H	H
	#29 (DOWN)	H	L	H	H	H	L	H	H
Reel motor	#30 (FWD)	H		H		L		H	
	#31 (REV)	H		L		L		L	

As illustrated above, the steady-state (during STOP, FF, RW, and PLAY) control output of the ASSIST motor is at HIGH level, holding the motor under brake applied by the motor control IC.

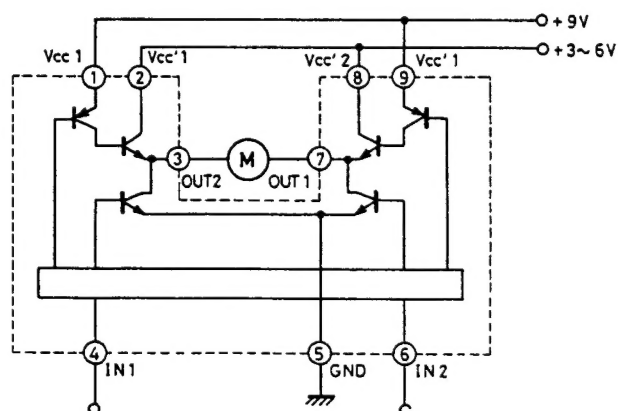
The control output of the REEL motor is momentarily held under braking condition only when the power is turned on, then is restored to normal to output the control signals as usual.

## Mechanical position code

Q-701			Mode
#34	#35	#36	
H	H	L	—
L	H	L	PLAY
L	L	L	—
H	L	L	PAUSE
H	L	H	—
L	L	H	STOP
L	H	H	FF, REW
H	H	H	—

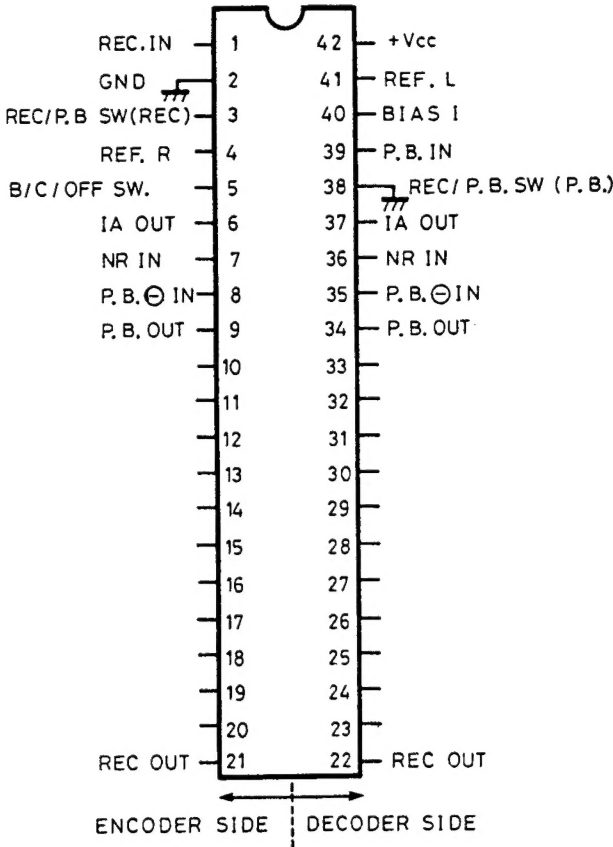
## IC BLOCK DIAGRAM

### M54544AL (MOTOR DRIVE)

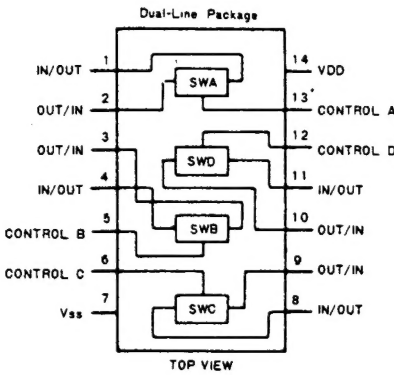


INPUT		OUTPUT		Remark
# 4	# 6	# 3	# 7	
L	L	OFF	OFF	—
H	L	H	L	FWD
L	H	L	H	REV
H	H	L	L	Brake

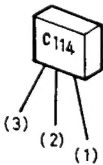
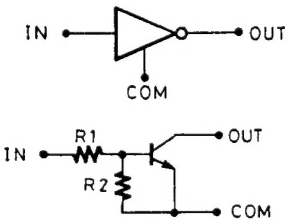
**HA-12090NT**  
**(DOLBY B & C TYPE NR SYSTEM, ENCODER & DECODER**  
**IN ONE PACKAGE)**



**4066BP or BU4066**



**DTC144ES**  
**DTC114YS (Digital transistor)**



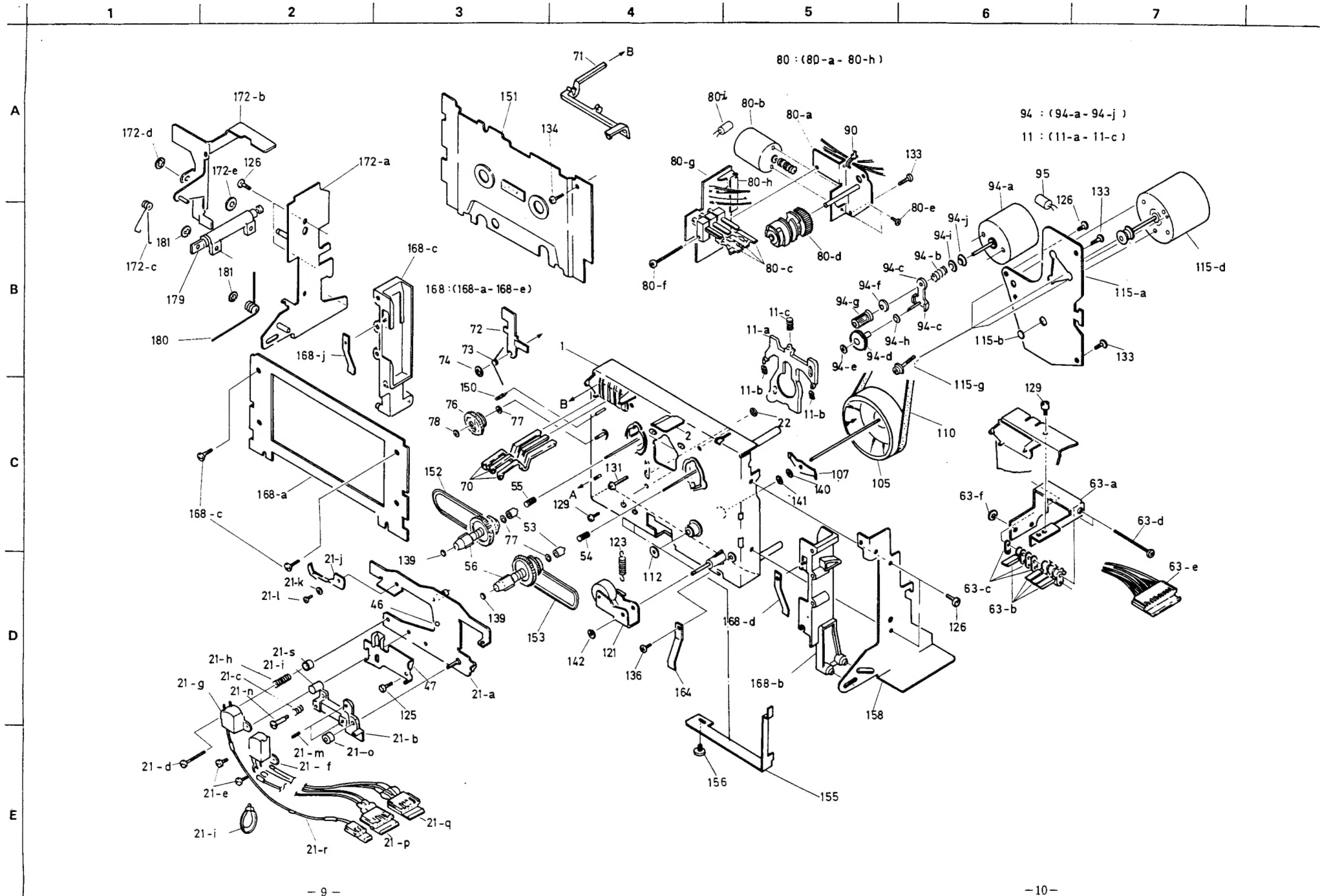
(1) IN  
 (2) OUT  
 (3) COM

	R 1	R 2
DTC 114 YS	10 KΩ	47 KΩ
DTC 144 ES	47 KΩ	47 KΩ

## TAPE MECHANISM-PARTS LIST

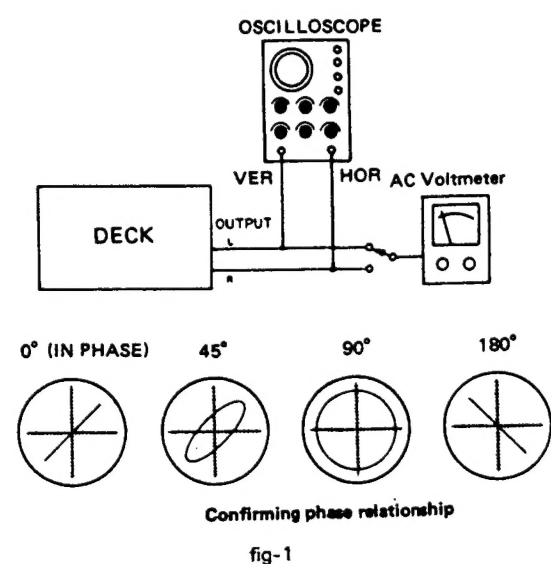
REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	24611042-1	Chassis	94	24601145	Reel motor ass'y
2	24605468	Spring	94a	24601054	Reel motor
11	24611043	Brake plate ass'y	94b	24605467	Spring
11a	24611053	Brake plate	94c	24602235A	Lever ass'y, wheel
11b	24610999	Brake rubber	94d	24602236A	Wheel
11c	24605500	Spring	94e	24610969	1.3 x 3.4 x 0.5mm, Washer
21a	24611045-1	Head base	94f	24610970	Felt
21b	24611046	Head block	94g	24602237A	Wheel, motor
21c	24605502	Spring	94h	24610981	1.7 x 4 x 0.25mm, Washer
21d	82512012	2 x 12mm, Binding screw	94i	24610374	Washer
21e	801250	2 x 4mm, Pan head screw	94j	24611048	Holder, spring
21f	24600037A	Rec/pb. head	95	352942206	22 $\mu$ F, 16V, Elect. capacitor
21g	24600041	Erase head	105	24602372	Flywheel
21h	24605618	Spring	107	24605452	Spring, thrust
21i	24611052	Binder	110	24602269	Flat belt
21j	24611054	Stopper	112	24610673	Flat washer
21k	24611055	Washer	115a	24610971	Plate, flywheel
21l	82112002	2 x 2mm, Pan head screw	115b	24610671	Holder, thrust
21m	801251	Screw	115d	24601202	Motor ass'y, capstan
21n	24610652	Shaft	115g	801338	Pan head screw with washer
21o	24610495	Adjustment nut	121	24602270	Arm, pinch roller
21p		Connector ass'y	123	24605453	Spring
21q		Connector ass'y	125	833125069	2.5 x 8mm, Pan head screw
21r		Connector ass'y	126	833125059	2.5 x 5mm, Pan head screw
21t	24604062	Spacer	129	801250	2 x 4mm, Pan head screw
22	893030	E3, Circlip	131	82512614	2.6 x 14mm, Binding screw
46	24610943	$\phi$ 3mm, Steelball	133	833426105	2.6 x 10mm, Tapping screw
47	24610963	Plate, head holding	134	833126055	2.6 x 5mm, Tapping screw
53	24610964	Spring holder	136	837120058	2 x 5, Truss screw
54	24605501	Spring	139	24610349	1.8 x 3.2 x 0.5mm, Washer
55	24605505	Spring	140	24610515	2.6 x 4.7 x 0.25mm, Washer
56	24602267	Reel stand ass'y	141	24610972	2.6 x 4.7 x 0.13mm, Washer
63a	24611056	Plate, switch holding	142	24610973	2.7 x 6 x 0.5mm, Washer
63b	24606205	Leafswitch	150	24605481	Spring
63c	24611057	Washer	151	24611235	Panel ass'y
63d	82112030	2 x 30mm, Pan head screw	152	24602271	Belt
63e		Connector ass'y	153	24602395	Belt
63f	24611058	Washer	155	26411079	Brake
70	24603281	Lever, switch	156	833130049	Pan head screw
71	24603282	Lever, switch, metal	158	24610939	Plate, right side
72	24611049	Plate, lock	164	24605188	Spring, cassette
73	24605503	Spring	168	24610940	Holder ass'y
74	891030	CS3, Circlip	168a	24610949	Plate, holder
76	24601167	Pulley ass'y	168b	24610849	Holder, right
77	24611047	2.1 x 4.5 x 0.1, Washer	168c	24610848	Holder, left
78	24611003	1.8 x 3.8 x 0.5, Washer	168d	24605463	Spring, cassette
80	24601216	PAD unit ass'y	168e	835426082	2.6 x 8mm, Flat head screw
80a	24610968	Plate	172a	24611059	Plate, left
80b	24601103	Motor PAD	172b	24603283	Lever, cancel
80c	24606182	Leafswitch	172c	24605504	Spring
80d	24602133	Cam gear	172d	893030	E3, Circlip
80e	82112003	2 x 3mm, Pan head screw	172e	24610452	Flat washer
80f	833125209	2.5 x 20mm, Pan head screw	179	24611051	Damper unit
80g	24606181	Pc board	180	24605456	Spring
80h	25055106	Post with base	181	891024	CS2.4, Circlip
80i	352942206	22 $\mu$ F, 16V, Elect. capacitor			
90	24611052	Binder			

# TAPE MECHANISM-EXPLODED VIEW



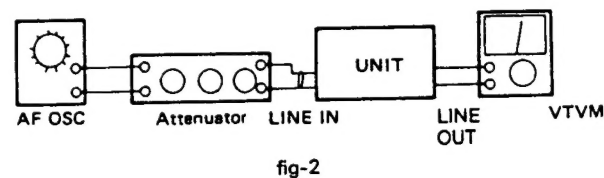
## ADJUSTMENT PROCEDURES

Item		Connection of instrument	Line input	Test tape	Mode	Output indicator	Adjustment point	Adjust	Remarks
1	Tape speed	Frequency counter to LINE output terminal		MTT-111	PB	Frequency counter	Semi-fixed on the motor	3,010 to 3,020Hz	
2	Head azimuth	AC voltmeter and oscilloscope to LINE output terminal		VTT-658	PB	AC Voltmeter	Head azimuth screw	Maximum and same phase at channels L and R	Fig. 1
3	Playback level	AC voltmeter to terminals TP-1 and TP-2		MTT-150	PB	AC voltmeter	R-125 (Ch. L) R-126 (Ch. R)	300mV	
4	Meter Level			MTT-150	PB	Level Indicator	R-324	0db level Indicator Light on	
5	Bias current	Fig. 2	1KHz, -20db and 12KHz, -20db	XL-II C-90	REC/PB	AC voltmeter	R-429 (Ch. L) R-430 (Ch. R)	Same level at REC/PB	Input VR maximum
6	Record level	Fig. 2	1 KHz		REC PAUSE	AC voltmeter	Attenuator or AF OSC output	350mV	accu VR center position
					REC/PB	AC voltmeter	R-401 (Ch. L) R-402 (Ch. R)	Same level at REC/PB	

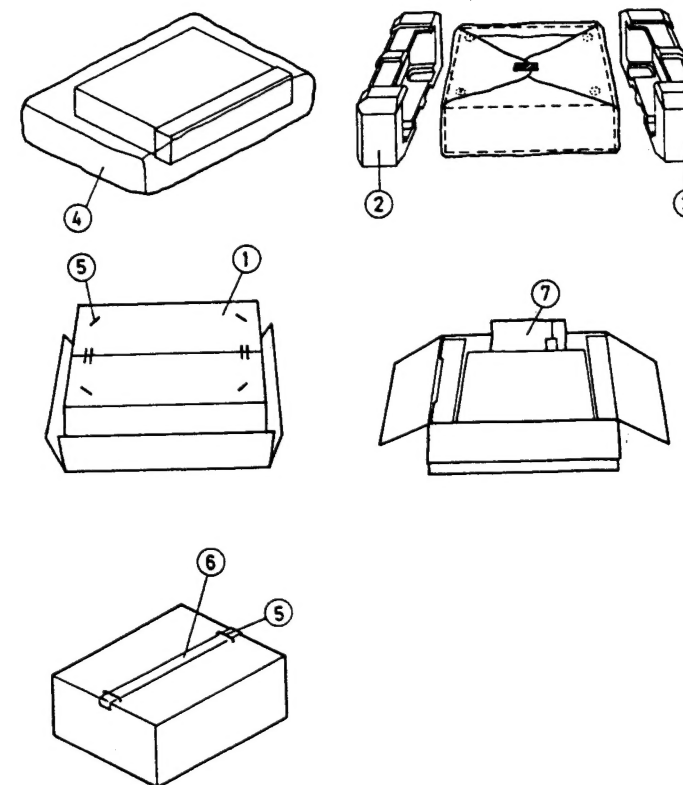


Blank tape  
 NORMAL ---- UD-1 C-90  
 HIGH ----- XL-II C-90  
 METAL ----- MX C-90

PLAY torque ----- 30 ~ 60 g/cm  
 FF. REW torque ---- 70 ~ 140 g/cm  
 Back tension ----- 4 ~ 7 g/cm

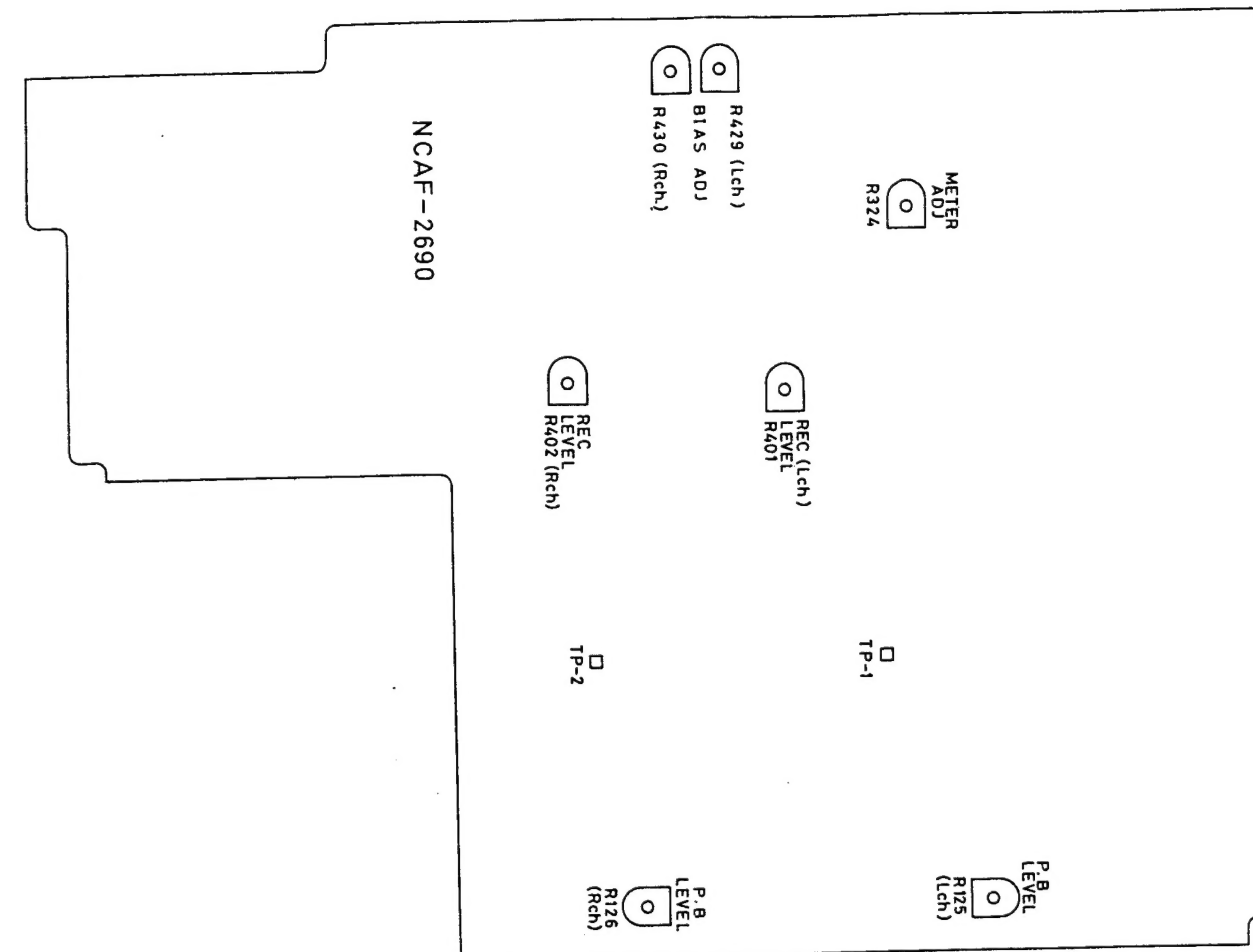


## PACKING VIEW



REF NO.	PART NO.	DESCRIPTION
1	29051320	Master carton box (S)
	29051322	Master carton box (B)
2	29090770A	Pad(L)
3	29090769B	Pad(R)
4	290311A	620 X 550 Poly bag
	29095012-1	500 X 800 Protection sheet (B)
5	282301	Sealing hook
6	260012	Damplon tape
7		Accessory bag ass'y
	29341013	Instruction manual
	2010095	Connection cable
	29365016B	Warranty card
	29100006A	350 X 250 Poly bag

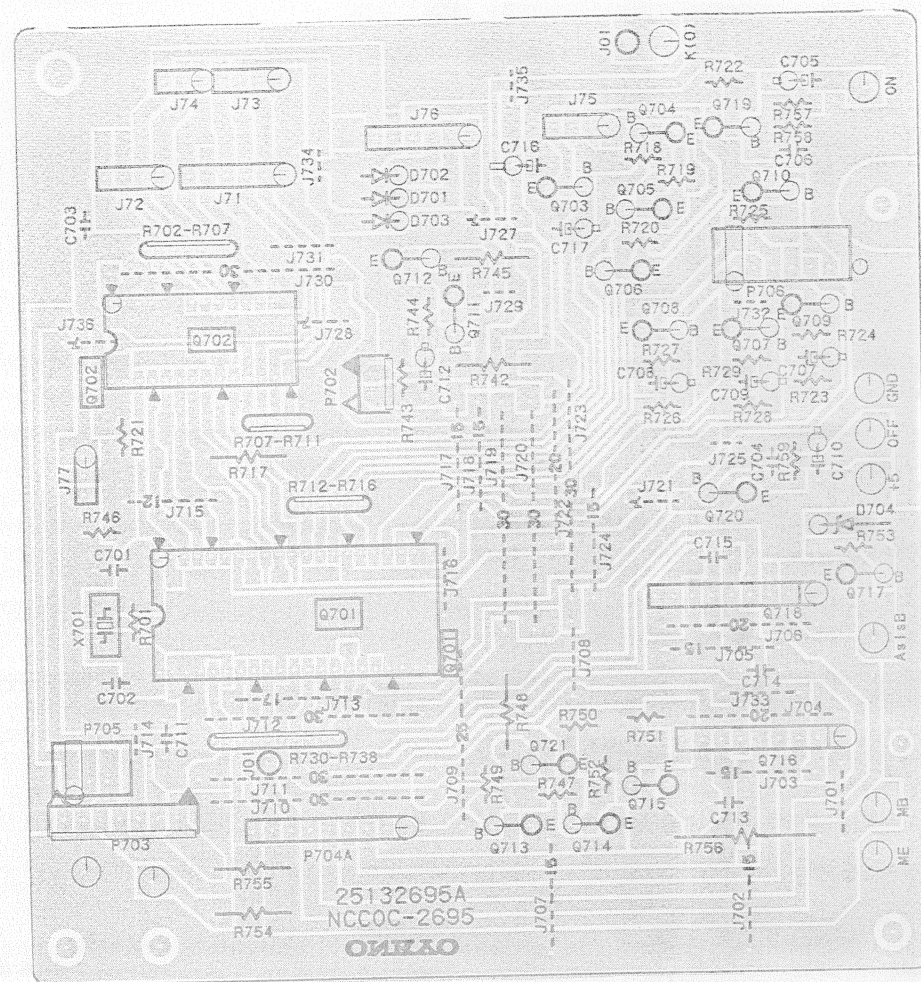
NOTE  
 (S) : Silver Model  
 (B) : Black Model



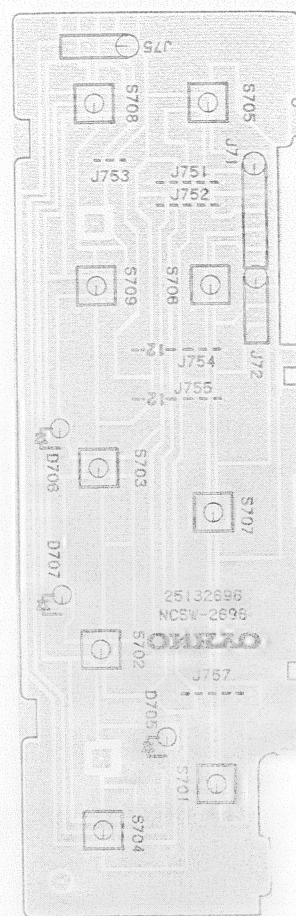


## PC BOARD VIEW FROM BOTTOM SIDE

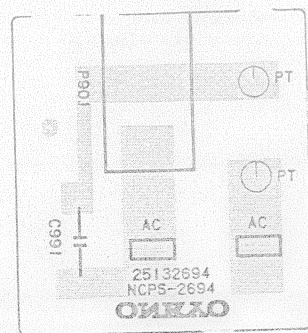
NACOC-2695-1



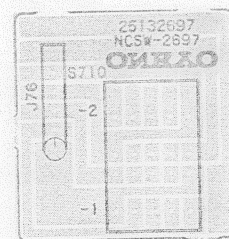
NASW-2696-1



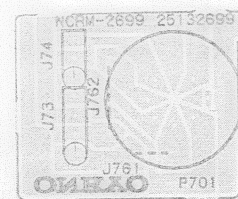
NAPS-2694-1



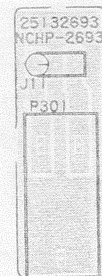
NASW-2697-1



NARM-2699-1



NAHP-2693-1





NAAF-2690-1A





## PC BOARD PART LIST

## Main circuit Pc board (NAFF-2690-1A)

CIRCUIT NO.	PART NO.	DESCRIPTION	CIRCUIT NO.	PART NO.	DESCRIPTION
Q107, Q108	222736	NJM4558S	D303, D304	223163	1SS133
Q201, Q202,	222811 or	NJM4558DD or	D305, D306	223848	GP08B
Q207, Q208	222502	NJM4558DX	D307-D310	223155 or	1SS138 or
Q209, Q210	222958	HA12090NT		223163	1SS133
Q213, Q214	222840661 or	4066BP or	D401, D403	223155 or	1SS138 or
	222933	BU4066B		223163	1SS133
Q301, Q302	222652	M5218L	D404, D405	2239673 or	RD15EB3 or
Q401, Q402	222808	M5218P		2243253	MTZ15C
Q410	222918	BA6251	D501	2239472 or	RD5.6EB2 or
Q501	222695 or	LA6324 or		2243152	MTZ5.6B
	222681	IR3702	D502, D503,	223163 or	1SS133 or
Q901	222780122	78M12	D601, D602	223155	1SS138
Q902	222790122	79M12	D603	223123	1K60
Q905	222780050	7805	D604-D608	223163 or	1SS133 or
	<b>Transistors</b>			223155	1SS138
Q101-Q104	2211896 or	2SC1815LBL or	D609, D610	223163 or	1SS133 or
	2211406	2SC2240BL		223155	1SS138
Q105, Q106	2211255,	2SC1815GR,	D611	2239673 or	RD15EB3 or
	2210746 or	2SC945AP or		2243253	MTZ15C
	2212485	JC501Q	D612	223163 or	1SS133 or
Q203-Q206	2211896 or	2SC1815LBL or		223155	1SS138
	2211406	2SC2240BL	D613	2239452 or	RD5.1EB2 or
Q211, Q212	2211255,	2SC1815GR,		2243142	MTZ5.1B
	2210746 or	2SC945AP or	D901	223862 or	WL01 or
	2212485	JC501Q		223890	WL01RL
Q215, Q216	2211705,	2SD655E,	D902	223868 or	2W02 or
	2211706,	2SD655F,		223889	RC202
	2212794 or	2SD1468R or	D903	2239653 or	RD13EB3 or
	2212795	2SD1468S		2243243	MTZ13C
Q217, Q218	2212304,	2SK381D,	D904	223342 or	GP15B or
	2212305,	2SK381E,		223891	RL152
	2211945 or	2SK246GR or	D905, D906	223155 or	1SS138 or
	2211946	2SK246BL		223163	1SS133
Q303, Q304	2211255,	2SC1815GR,		<b>Coils</b>	
	2210746 or	2SC945AP or	L101, L102	231099	NCH-6146
	2212485	JC501Q	L103, L104	233245	NMC-2029
Q403, Q404	2211255,	2SC1815GR,	L105, L106	231077,	NCH-2125,
Q406, Q408	2210746 or	2SC945AP or		231025 or	NCH-1064 or
	2212485	JC501Q		233188	NCH-1033
Q405, Q407	2211454 or	2SA1015Y or	L201, L202	231103	NMC-6149
	2212494	JA101P	L203, L204	233245	NCH-2029
Q409	2201540	2SD947	L205, L206	231077,	NCH-2125,
Q601-Q603	2211454 or	2SA1015Y or		231025 or	NCH-1064 or
	2212494	JA101P		233188	NCH-1033
Q604	2211255,	2SC1815GR,	L401, L402	231089 or	NCH-2137 or
	2210746 or	2SC945AP or		231044	NCH-2084
	2212485	JC501Q	L403-L406	231084 or	NCH-2032 or
Q605	2211454 or	2SA1015Y or		231039	NCH-2079
	2212494	JA101P	L407, L408	231101	NCH-2148
Q606	221282	DTC-144ES	L409, L410	231025	NCH-1064
Q607	2211454	2SA1015Y		<b>OSC Block</b>	
Q903	2211255,	2SC1815GR,	Z401	24606198	NOB-029
	2210746 or	2SC945AP or		<b>Capacitors</b>	
	2212485	JC501Q	C103, C104	392880337	3.3μF, 50V, LL.
Q904	2201074,	2SD880Y,	C109-C112	354741009	10μF, 16V, Elect.
	2201385 or	2SD330E or	C121, C122	354732219	220μF, 10V, Elect.
	2201035	2SD325E	C125-C128	354741009	10μF, 16V, Elect.
	<b>Diodes</b>		C131, C132	354780109	1μF, 50V, Elect.
D201, D202	223163 or	1SS133 or	C135, C136	354786899	0.68μF, 50V, Elect.
	223155	1SS138	C137, C138	354780229	2.2μF, 50V, Elect.
D301, D302	223123	1K60	C145, C146	354786899	0.68μF, 50V, Elect.
D303, D304	223155 or	1SS138 or	C201, C202	354783399	0.33μF, 50V, Elect.
			C205, C206	354780109	1μF, 50V, Elect.

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Capacitors</b>	
C207-C210	354780109	1μF, 50V, Elect.
C211, C212	354741009	10μF, 16V, Elect.
C214, C215	354780109	1μF, 50V, Elect.
C217, C218	354732219	220μF, 10V, Elect.
C219, C220	354742209	22μF, 16V, Elect.
C223-C227	354741009	10μF, 16V, Elect.
C231, C232	354780109	1μF, 50V, Elect.
C235, C236	354786899	0.68μF, 50V, Elect.
C237, C238	354780229	2.2μF, 50V, Elect.
C245, C246	354786899	0.68μF, 50V, Elect.
C247, C248	354780229	2.2μF, 50V, Elect.
C249, C250	354741009	10μF, 16V, Elect.
C301, C302	354741009	10μF, 16V, Elect.
C303, C304	354780339	3.3μF, 50V, Elect.
C401, C402	354782299	0.22μF, 50V, Elect.
C413, C414	354750479	4.7μF, 25V, Elect.
C419	354732219	220μF, 10V, Elect.
C420	354780109	1μF, 50V, Elect.
C507	354780109	1μF, 50V, Elect.
C601	354741009	10μF, 16V, Elect.
C602	354750479	4.7μF, 25V, Elect.
C903, C904	352751029	1000μF, 25V, Elect.
C905	354782299	0.22μF, 50V, Elect.
C906	354781099	0.1μF, 50V, Elect.
C907	354780229	2.2μF, 50V, Elect.
C908	354780109	1μF, 50V, Elect.
C909	352751029	1000μF, 25V, Elect.
C910	354742219	220μF, 16V, Elect.
C911	354744709	47μF, 16V, Elect.
C913	3504168	1300μF, 25V, Elect.
C914	354782299	0.22μF, 50V, Elect.
C915	354781099	0.1μF, 50V, Elect.
C917	354750479	4.7μF, 25V, Elect.
C919, C920	354741019	100μF, 16V, Elect.
C921	354742219	220μF, 16V, Elect.
C923, C924	354741009	10μF, 16V, Elect.
C925, C926	354744719	470μF, 16V, Elect.
	<b>Resistors</b>	
R125, R123	5215046	N08HR50kBC, Semi-fixed
R229	5104184	N09RL1C250kWT20M, Variable
R324	5215045	N08HR10kBC, Semi-fixed
R401, R402	5215044	N08HR5kBC, Semi-fixed
R429, R430	5215046	N08HR50kBC, Semi-fixed
R444	5104189	N09RL1C5kBT20M, Variable
R449	441521004F	10Ω, 1/2W, Oxidefilm
R905	441723904NF	39Ω, 2W, Oxidefilm

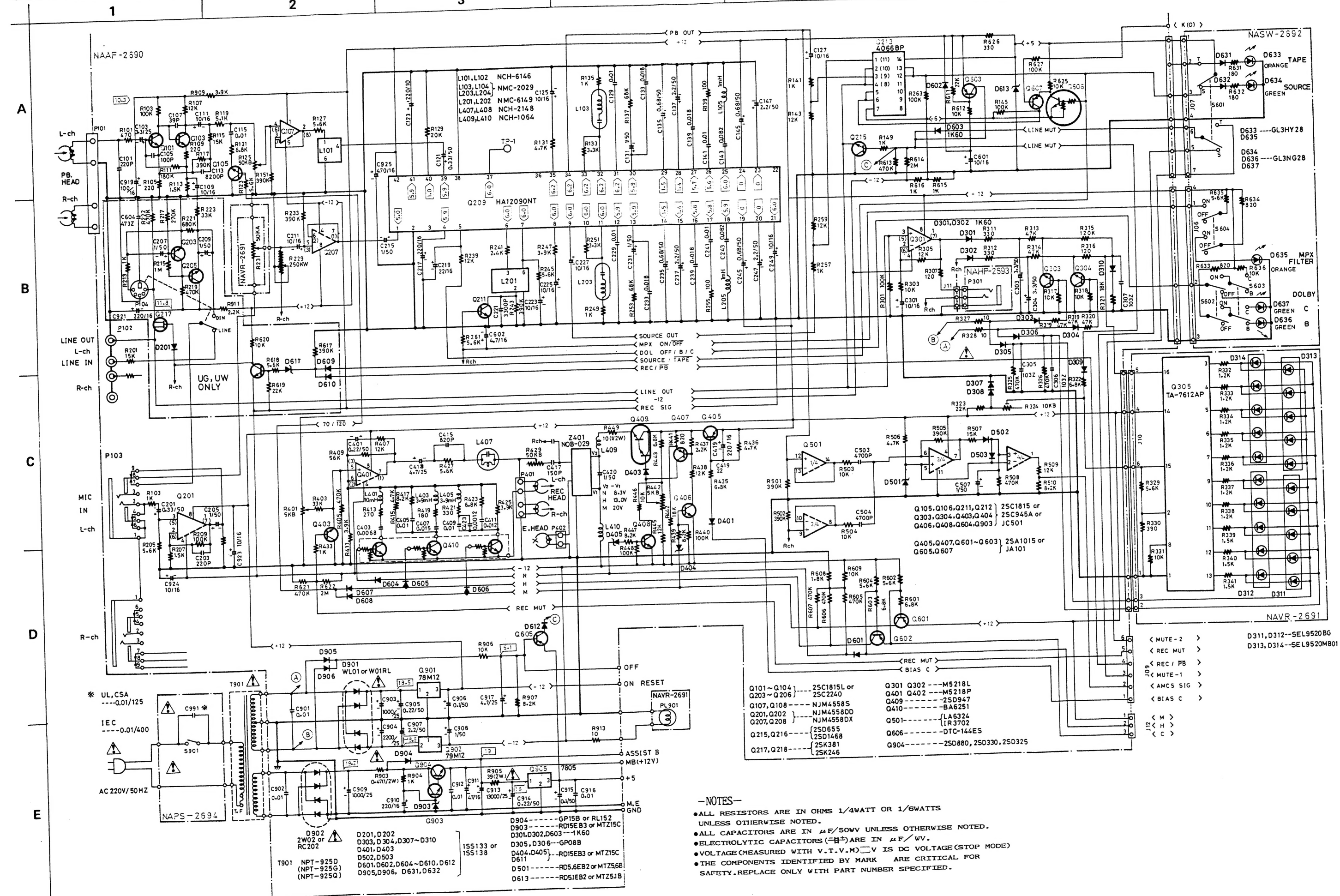
CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Miscellaneous</b>	
P101, P401	25055134	NPLG-4P118, Plug
P402	25055132	NPLG-2P116, Plug
P102	25045120	NPS-4PDBL49, Terminal
P103	25045195	HLJ-4338-01-3010, Terminal
P104	25050064	NSCT-5P18, DIN Socket
	27160156	Radiator
	27160029-1	RAD-07B, Radiator
	223019	AC-229, TR Spacer
	223017	AC-310, Bush
	27141069	Bracket
	880009	Revert
	82143010	3P+10FN (BC), Screw
	863430	N-3F-N (BC), Nut
	27225077	Shield plate

## Input volum pc board (NAVR-2691-1)

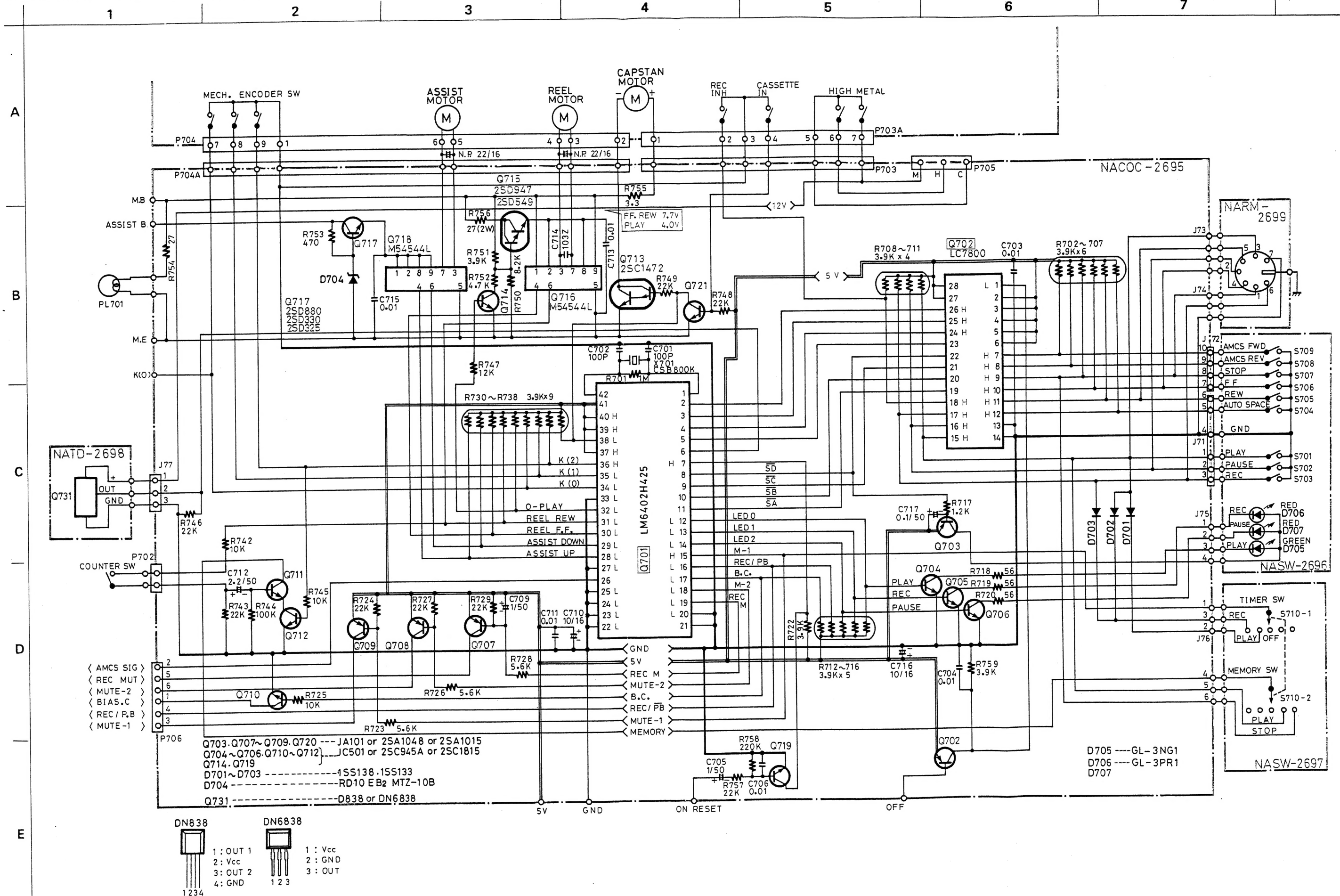
CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>ic</b>	
Q305	222507	TA7612AP
	<b>LEDs</b>	
D311, D312	225160	SEL9520BG
D312, D314	225161	SEL9520MB01
	<b>Lamp</b>	
PL901	210090	14V, 150mA
	<b>Resistors</b>	
R231, R232	6172001	N60LGL50kA5Z, Variable
	<b>Miscellaneous</b>	
	223004-1	Terminal
	8767200604	W2x6B (Ni), Washer
	82142003	3P+3F (BC), Screw
	27225076	Shield pleta
	27225078	Shield pleta

## Display pc board (NASW-2692-1)

CIRCUIT NO.	PART NO.	DESCRIPTION
	<b>Diodes</b>	
D631, D632	223155 or	1SS138 or
	223163	1SS133
	<b>LEDs</b>	
D633, D635	225178	GL3HY28
D634	225179	GL3NG28
D636, D637	225179	GL3NG28
	<b>Switch</b>	
S601-S604	25035523	NPS-122-L485
	<b>Holder</b>	
	27190462A	Holder (LED-5)



## SCHEMATIC DIAGRAM-CONTROL SECTION




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# CHASSIS EXPLODED VIEW PART LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
A1	27110282B	Front bracket	A513	27300697	Cassette lid
A4	27115205	Side bracket	A514	27262441	Plate
A5	28140690	Cushion	A515	28191350	Window
A6	28133166	Back plate	A517	27170225A	Bottom board
A7	28130237	Dail plate	A518	27175011C	Leg
A8	27190446	Holder	A801	28322565	Knob ass'y (S)
A10	27130331H	Bracket (PT)		28322568	Knob ass'y (B)
A11	27190551-1	Holder (POW)	A804	28321904A	Knob (POW) ass'y (S)
A13	27273030C	Joint (L)		28321905	Knob (POW) ass'y (B)
A14	28170014	Bushing	A805	28321027B	Knob (EJ) ass'y (S)
A15	27190009	Holder		28321988	Knob (EJ) ass'y (B)
A19	86414010	FWN4x10, Flange nut	A806	28320797	Knob (SEL) (S)
A27	880009	Revert		28321735	Knob (SEL) (B)
A28	27141074	Bracket (C)	A807	28322437	Knob (LEV)
A29	24601205	Counter	A808	870039A	Washer
A30	27120876A	Back bracket	T901	Δ 2300122	NPT-925G, Power transformer
A32	27300750	Strainrelief	P1	Δ 253128A	AS-CEE, Power supply cord
A41	830440089	4TTC+8C (BC), Screw	P101	2000580	NSAS2P536, Socket
A42	834426068	2.6TTS+6B (BC), Screw	U1	15084590-1A	NAAF-2690-1A
A43	894430068	3TTS+6B (BC), Screw			Main pc board ass'y
A44	801217	8W-3P+12F, Screw	U2	15088591-1	NAVR-2691-1,
A45	833430080	3TTP+8P (BC), Screw			Input volum pc board ass'y
A46	831430088	3TTW+8B (BC), Screw	U3	15088592-1	NASW-2692-1
A47	834430108	3TTW+10B (BC), Screw			Display pc board ass'y
A48	82142604	2.6P+4F (BC), Screw	U4	15088593-1	NAHP-2693-1
A49	838440089	4TTB+8C (BC), Screw			Headphone pc board ass'y
A50	838430088	3TTB+8B (BC), Screw	U5	15088594-1	NAPS-2694
A51	834230108	3TTS+10B (Ni), Screw			Power supply pc board ass'y
A52	223004-1	Lug terminal	U6	15088595-1	NACOC-2695-1
A301	28184235	Top cover (S)			Control pc board ass'y
	28184236	Top cover (B)	U7	15088596-1	NASW-2696-1
A304	28140408	Cushion			Operation switch pc board ass'y
A501	15082121	Front panel ass'y (S)	U8	15088597-1	NASW-2697-1
	15092121	Front panel ass'y (B)			Timer switch pc board ass'y
-a	28125133	End cap (L) (S)	U9	15088598-1	NATD-2698-1
	28125135A	End cap (L) (B)			Hall IC pc board ass'y
-b	28125134	End cap (R) (S)	U10	15088599-1	NARM-2699-1
	28125136A	End cap (R) (B)			Remoto control pc board ass'y
-c	27267238A	Guide (EJ) (S)	Z1	244092	NDM-84, Tape mechanism ass'y
	27267239A	Guide (EJ) (B)			
-d	27267206B	Guide (POW) (S)			
	27267235B	Guide (POW) (B)			
-e	28198577	Facet (POW)			
-f	28191354A	Clear plate			
-g	27262410	Plate			

NOTE: THE COMPONENTS IDENTIFIED BY MARK  ARE CRITICAL FOR RISK OF FIRE AND ELECTRIC SHOCK. REPLACE ONLY WITH PARTS NUMBER SPECIFIED.

NOTE: (S): Only Silver model  
(B): Only Black model

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